

Claims

[c1] What is claimed is:

1. A patch antenna comprising:

a dielectric layer having a top surface and a bottom surface;

a first priming layer on the top surface;

a second priming layer on the bottom surface;

a first adhesive layer on the first priming layer;

a second adhesive layer on the second priming layer;

a radiating element on the first adhesive layer; and

a ground plate on the second adhesive layer.

[c2] 2. The patch antenna of claim 1 further comprising a low noise amplifier integrated with the patch antenna by sharing a common ground plate or by electrically connecting respective ground plates and a signal conductor pin from the amplifier to the radiating element.

[c3] 3. The patch antenna of claim 1 wherein the dielectric layer comprises a material selected from a group consisting of Polyethylene (PE), Polypropylene (PP), Polystyrene (PS), Polyisobutylene (PIB), Polybutylene (PB), Polybutadiene (BR), Teflon, Acrylonitrile / Butadiene / Styrene (ABS), Acrylonitrile / Ethylene-Propylenediene /

Styrene (AES), Acrylonitrile / Styrene / Acrylate (ASA), Polyurethane (PU), and Polycarbonate (PC).

- [c4] 4. The patch antenna of claim 1 wherein the dielectric layer substantially is polymer plastic.
- [c5] 5. The patch antenna of claim 4 wherein the first priming layer comprises a polymeric surfactant.
- [c6] 6. The patch antenna of claim 4 wherein the first adhesive layer comprises double sided tape.
- [c7] 7. The patch antenna of claim 4 wherein the first and second priming layers comprise a polymeric surfactant and the first and second adhesive layers comprise double sided tape.
- [c8] 8. The patch antenna of claim 7 wherein the polymer plastic is a polyolefin.
- [c9] 9. A method of antenna assembly, the antenna comprising a radiating element, a dielectric layer, and a ground plate, the method comprising:
 - applying a first adhesive layer to radiating element;
 - applying a second adhesive layer to the ground plate;
 - applying a priming layer to a top and a bottom surface of the dielectric layer;
 - fixing the radiating element to the dielectric layer by

compressing first adhesive layer between the radiating element and the priming layer applied to the top surface of the dielectric layer; and
fixing the ground plate to the dielectric layer by compressing the second adhesive layer between the ground plate and the priming layer applied to the bottom surface of the dielectric layer.

- [c10] 10. The method of claim 9 further comprising integrating an amplifier into the antenna with a common ground plate or electrically connected ground plates and a conductor pin electrically connected from the radiating element to the amplifier, the conductor pin passing through openings in the adhesive layers, the priming layers, the dielectric layer, and the ground plate.
- [c11] 11. The method of claim 9 wherein the first adhesive layer is double sided tape.
- [c12] 12. The method of claim 9 wherein the priming layer comprises polymeric surfactants.
- [c13] 13. The method of claim 9 wherein the dielectric layer comprises a material selected from a group consisting of Polyethylene (PE), Polypropylene (PP), Polystyrene (PS), Polyisobutylene (PIB), Polybutylene (PB), Polybutadiene (BR), Teflon, Acrylonitrile / Butadiene / Styrene (ABS),

Acrylonitrile / Ethylene–Propylenediene / Styrene (AES), Acrylonitrile / Styrene / Acrylate (ASA), Polyurethane (PU), and Polycarbonate (PC).

- [c14] 14. The method of claim 9 wherein the dielectric layer substantially is polymer plastic.
- [c15] 15. The method of claim 9 wherein the priming layer comprises a polymeric surfactant and the first and second adhesive layers comprise double sided tape.
- [c16] 16. The method of claim 15 wherein the dielectric layer substantially is a polyolefin.
- [c17] 17. An antenna comprising:
a polymer plastic dielectric layer having a top surface and a bottom surface;
a first priming layer comprising a polymeric surfactant on the top surface;
a second priming layer comprising a polymeric surfactant on the bottom surface;
a first adhesive layer comprising double sided tape fixed to the first priming layer;
a second adhesive layer comprising double sided tape fixed to the second priming layer;
a radiating element fixed to the first adhesive layer; and
a ground plate fixed to the second adhesive layer.

- [c18] 18. The antenna of claim 17 further comprising a low noise amplifier and a signal conductor pin electrically connecting the low noise amplifier to the radiating element.
- [c19] 19. The patch antenna of claim 17 wherein the dielectric layer comprises a material selected from a group consisting of Polyethylene (PE), Polypropylene (PP), Polystyrene (PS), Polyisobutylene (PIB), Polybutylene (PB), Polybutadiene (BR), Teflon, Acrylonitrile / Butadiene / Styrene (ABS), Acrylonitrile / Ethylene-Propylenediene / Styrene (AES), Acrylonitrile / Styrene / Acrylate (ASA), Polyurethane (PU), and Polycarbonate (PC).
- [c20] 20. The patch antenna of claim 17 wherein the polymer plastic dielectric layer substantially comprises a polyolefin.